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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,592	07/20/2001	Jonathan M. Friedman	389004/039 JJD/BO	1403

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EXAMINER

LY, CHEYNE D

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/910,592	Applicant(s) FRIEDMAN, JONATHAN M.	
	Examiner Cheyne D. Ly	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/11/05; 3/30/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-23, 37, 39-53, 61 and 62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-23, 37, 39-53, 61 and 62 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 11, 2005 has been entered.
2. Applicants' arguments have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.
3. The species election requirement, mailed June 11, 2003, has been withdrawn.
4. Claims 1-12, 14-23, 37, 39-53, 61, and 62 are examined on the merits.

OBJECTIONS

5. The disclosure is objected to because the instant specification recites incomplete references. For example, Applicant discloses "absolute optima (Fig. xxx)" on page 9, line 16. It is noted that the amendments to the specification, filed July 20, 2001 and

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November 13, 2003, have been addressed the above issue. Appropriate correction is required.

6. The amendments filed November 13, 2003 and July 20, 2001 are objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention.

The added material which is not supported by the original disclosure is as follows:

7. Specific to the amendment, filed November 13, 2003, the addition of disclosure to page 34, line 12, is new matter because the proposed amendment is not present in the instant specification as originally filed.
8. Specific to the preliminary amendment, filed July 20, 2001, the amendment has been considered to be new matter. It is noted that the preliminary amendment is filed on the same date as the instant Application. However, the amendment is considered to introduce new matter because the Oath, filed July 20, 2001, does not refer to said preliminary amendment as required by the MPEP 608.04 (b) and 714.01 (e). It is noted that the references Applicant is attempting to amend into the specification is considered to be new matter because, as originally filed, the partial references as indicated by "xxx" are not specific to the references being added. For example, the amendment to page 19 to replace "(R.Reedxxx)" with the specification is considered to be new matter because "(R.Reedxxx)" refers to any reference published by "R.Reed" but not specific to the reference being added. Further, the attempt to added data to the specification on Page 20 is new matter because the data is not present in the specification as originally filed.

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9. Applicant is required to cancel the new matter in the reply to this Office Action.
10. Claim 16 is objected to because items e) and p) recites the same limitation of “an oligopeptide”; therefore, redundant. Appropriate correction is required.

CLAIM REJECTIONS - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 1-12, 14, 16-23, 37, 39-45, 47-53, 61, and 62 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory algorithm type subject matter.
13. Claims 1-12, 14, 16-23, 37, 39-45, 47-53, 61, and 62 are rejected because said claims are directed to a method comprising steps for modeling experimental x-ray diffraction data without any physical alteration step, which is considered to be non-statutory subject matter. “For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory. However, a claimed process for digitally filtering noise employing the mathematical algorithm is statutory.” (MPEP § 2106 (IV)(B)(2) (b), part ii). The step of filtering noise is controlled by the results generated from the data manipulation. The difference between the claimed invention and the citation above is that the instant claims recite limitations directed to data manipulation without any limitation which could reasonably be construed as controlling any physical steps resulted from said data manipulation. Similar to the nonstatutory example above,

the instant invention comprises algorithmic steps for modeling experimental x-ray diffraction data without any physical alteration resulted from said modeling steps.

14. It is acknowledged that the instant invention comprises steps for “outputting said three-dimensional representation to a suitable output hardware,” however, the “output hardware” limitation has been reasonably construed as another component within the claimed “computational means.” For example, the limitation has been reasonably construed as the outputting from one processor to another processor within a computing environment without resulting in any physical transformation from said outputting. Therefore, “such activity is not determinative of whether the process is statutory because such transformation alone does not distinguish a statutory computer process from a nonstatutory computer process” (MPEP § 2106 (IV)(B)(2) (b), part ii).

CLAIM REJECTIONS - 35 U.S.C. § 112, SECOND PARAGRAPH

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 1-12, 14-23, 37, 39-53, 61, and 62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
17. Claims 1-12, 14-23, 37, 39-53, 61, and 62 are vague and indefinite because the steps in the body of the claim recite the limitation of “means to...” as linked to a function, which

has been reasonably construed as the attempt by Applicant to invoke 35 U.S.C. 112, sixth paragraph. However, the metes and bounds of the claim have not been specifically defined for the limitation of “means to...” in the specification. The instant disclosure does not defined the structures necessary for each “means for 35 U.S.C. 112, sixth paragraph states that a claim limitation expressed in means-plus-function language "shall be construed to cover the corresponding structure...described in the specification and equivalents thereof." "If one employs means plus function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language. If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112." In re Donaldson Co., 16 F.3d 1189, 1195, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) (in banc). (See MPEP 2181 [R-2]).

18. Claim 1, lines 11-12, recites the limitation of “the model is reduced relative to the number of experimental data” wherein the antecedent basis for the limitation of “the number of experimental data” is not clear as directed to the limitation of “reduced relative to.” Claim 1 is not clear as to whether the comparison to achieved the “reduced relative to” is perform with the number of “experimental x-ray diffraction data” or “the number of degrees of freedom” generated from the “x-ray diffraction data.” The same issue is present in claim 48. Claims 2-12, 14-23, 37, 39-47, 49-53, 61, and 62 are rejected for being dependent from claim 1 or 48.

19. The limitation “desirable”, in claim 17, line 7, is vague and indefinite due to lacking any metes and bounds as to what suitability characteristic is being evaluated in order to compare to less suitable attributes so as to evaluate what is “desirable”.
20. Claim 22, lines 3-4, recites the limitation of “depicting... from the summation of said at least one Fourier representation” which is vague and indefinite because the Fourier representation has not been summarized in dependent from claim 1 (e). Claim 23 is rejected for being dependent from claim 22.
21. Claim 41, (j), recites limitation of “the input limiting resolution” wherein the antecedent basis for said limitation is not clear. It is not claim 1, (b), recites “determining the maximum minimal resolution” wherein said resolution has not been input, but determined. Claim 42 has been rejected for being dependent from claim 41.
22. Claim 42, (p), is vague and indefinite because it is not clear whether the limitation of “l, m, n components” are directed to the steps (l), (m), and (n) in claims 41 and 42, or “the indices lmn” recited in claim 41, (j).
23. Claim 43, line 4, recites the limitation of “the model of said crystal” wherein the antecedent basis for said limitation is not clear. Is noted that claim 1 from which claim 43 depends recites “a spherical harmonic spherical Bessel model” in line 10 and “a model crystal lattice.” Therefore, the antecedent basis for the limitation of “the model of said crystal” is not clear.

CONCLUSION

24. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547. The USPTO's official fax number is (571) 273-8300.
25. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.
26. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

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27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Dune Ly, whose telephone number is (571) 272-0716.

The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

28. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, Ph.D., can be reached on (571) 272-0718.

C. Dune Ly / *CDL*
6/24/05

Ardin H. Marschel 6/25/05
ARDIN H. MARSCHEL
SUPERVISORY PATENT EXAMINER